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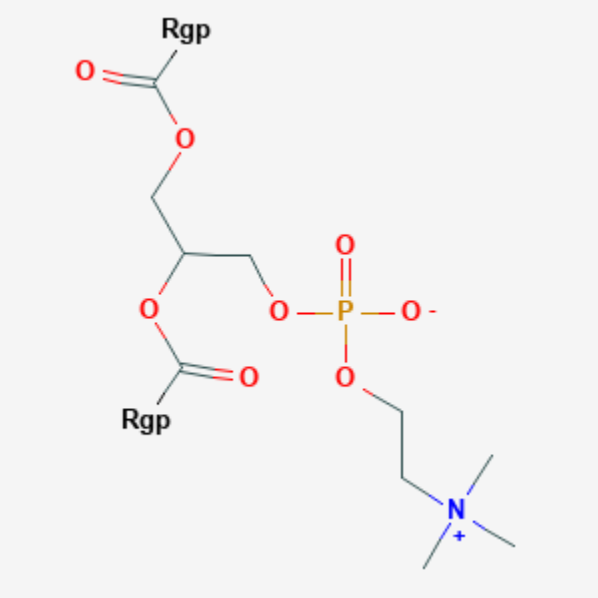
Lecithin

Revised: October 23, 2019.

CASRN: 8002-43-5



Drug Levels and Effects

Summary of Use during Lactation

Lecithin is a mixture of choline, choline esters, fatty acids, glycerol, glycolipids, triglycerides, phosphoric acid, and phospholipids, such as phosphatidylcholine that are normal components of human milk. Supplemental lecithin has been recommended as a treatment for plugged milk ducts,[1][2][3] and as an additive to human milk that is given to preterm infants via pumping through plastic tubing in order to prevent fat loss.[4] No scientifically valid clinical studies exist on the safety and efficacy of high-dose lecithin supplementation in nursing mothers or infants. Supplementation with one component of lecithin, phosphatidylcholine, increases choline, but not phosphatidylcholine concentrations in breastmilk and supplementation with choline increases choline metabolites, but not choline in breastmilk. Lecithin is usually well tolerated and is considered to be "generally recognized as safe" (GRAS) by the U.S. Food and Drug Administration.

Disclaimer: Information presented in this database is not meant as a substitute for professional judgment. You should consult your healthcare provider for breastfeeding advice related to your particular situation. The U.S. government does not warrant or assume any liability or responsibility for the accuracy or completeness of the information on this Site .

Dietary supplements do not require extensive pre-marketing approval from the U.S. Food and Drug Administration. Manufacturers are responsible to ensure the safety, but do not need to *prove* the safety and effectiveness of dietary supplements before they are marketed. Dietary supplements may contain multiple ingredients, and differences are often found between labeled and actual ingredients or their amounts. A manufacturer may contract with an independent organization to verify the quality of a product or its ingredients, but that does *not* certify the safety or effectiveness of a product. Because of the above issues, clinical testing results on one product may not be applicable to other products. More detailed information about dietary supplements is available elsewhere on the LactMed Web site.

Drug Levels

No published information was not found as of the revision date on milk levels of lecithin components following maternal supplementation. However, lecithin components are normally found in breastmilk as reported below.

Maternal Levels. A study of human milk from mothers of preterm (n = 17) and fullterm (n = 16) infants found several lecithin components, such as choline, phosphocholine, and phosphatidylcholine. Choline levels in fullterm milk were higher (116 micromoles/L) than in preterm milk (98 micromoles/L). Choline ester concentrations were not different between the two types of milk. Phosphatidylcholine choline levels were sightly higher (90 micromoles/L) than in fullterm milk (82 micromoles/L), but the difference was not statistically significant.[5]

Longitudinal analysis of human milk samples from 8 mothers found that choline levels increased from 110 micromoles/L during days 2 to 6 postpartum to 210 micromoles/L during days 7 to 22. Phosphatidylcholine increased from 70 micromoles/L to 100 micromoles/L over the same time periods.[6]

A study of 103 pregnant women measured the choline content of their milk through 45 days postpartum. Participants were given a daily supplement of 5400 mg of phosphatidylcholine (PhosChol brand) equal to 750 mg of choline (n = 48) or a placebo (n = 48). The daily dosage was divided equally between morning and evening. At 45 days postpartum, breastmilk choline concentrations were statistically different at 83 micromoles/L in the placebo group and 106 micromoles/L in the supplemented group. Phosphatidylcholine concentrations were not statistically different at 107 micromoles/L in the placebo group and 113 micromoles/L in the supplemented group.[7]

Lactating women were given either 480 or 930 mg of choline daily. Both doses increased the breastmilk content of the choline metabolites, phosphocholine, glycerophosphocholine, glycine and trimethylamine oxide.[8]

Water-soluble forms of choline were measured in the breastmilk of Canadian (n = 301) and Cambodian (n = 67) mothers. Mean concentrations were free choline, 151 micromoles/L; phosphocholine 540 micromoles/L; glycerophosphocholine 411 micromoles/L and and the sum of water-soluble forms of choline 1102 micromoles/L. Values did not differ between the 2 countries.[9]

Infant Levels. Relevant published information was not found as of the revision date.

Effects in Breastfed Infants

Relevant published information was not found as of the revision date.

Effects on Lactation and Breastmilk

Relevant published information was not found as of the revision date.

References

1. Lawrence RA. Breastfeeding: A guide for the medical profession, 2nd ed. C.V. Mosby. Saint Louis. 1985;203.

2. Scott CR. Lecithin: it isn't just for plugged milk ducts and mastitis anymore. Midwifery Today Int Midwife. 2005;26-7.. PubMed PMID: 16419666.
3. McGuire E. Case study: white spot and lecithin. Breastfeed Rev. 2015;23:23–5. PubMed PMID: 25906494.
4. Chan MM, Nohara M, Chan BR, et al. Lecithin decreases human milk fat loss during enteral pumping. J Pediatr Gastroenterol Nutr. 2003;36:613–5. PubMed PMID: 12717084.
5. Holmes-McNary MQ, Chen WL, Mar MH, et al. Choline and choline esters in human and rat milk and in infant formulas. Am J Clin Nutr. 1996;64:572–6. PubMed PMID: 8839502.
6. Holmes HC, Snodgrass GJ, Iles RA. Changes in the choline content of human breast milk in the first 3 weeks after birth. Eur J Pediatr. 2000;159:198–204. PubMed PMID: 10664235.
7. Fischer LM, da Costa KA, Galanko J, et al. Choline intake and genetic polymorphisms influence choline metabolite concentrations in human breast milk and plasma. Am J Clin Nutr. 2010;92:336–46. PubMed PMID: 20534746.
8. Davenport C, Yan J, Taesuwan S, et al. Choline intakes exceeding recommendations during human lactation improve breast milk choline content by increasing PEMT pathway metabolites. J Nutr Biochem. 2015;26:903–11. PubMed PMID: 26025328.
9. Wiedeman AM, Whitfield KC, March KM, et al. Concentrations of water-soluble forms of choline in human milk from lactating women in Canada and Cambodia. Nutrients. 2018;10:E381. PubMed PMID: 29558412.

Substance Identification

Substance Name

Lecithin

CAS Registry Number

8002-43-5

Drug Class

Breast Feeding

Lactation

Complementary Therapies

Food

Phytotherapy

Phospholipids

Plants, Medicinal